2002 Research and Development Plan

Arkansas Science & Technology Authority

Approved: January 18, 2002

The Arkansas Science & Technology Authority's Board of Directors approved the 2002 Research and Development Plan on January 18, 2002. Approval of the 2002 R&D Plan accomplishes an important goal set by the Board for the fiscal year: to contribute to the preparation of a coherent research and development road map.

The Five Main Research Areas

1. Advanced Materials and Manufacturing Systems
2. Agriculture, Food and Environment Sciences
3. Biotechnology, Bioengineering, and Life Sciences
4. Information Technology
5. Human Resource Development

Introduction

The Arkansas Science & Technology Authority prepared the 2002 Research and Development Plan in accordance with the Authority's Vision and Mission statements.

Vision: The Authority believes that the economic well-being of Arkansas, its communities, and its citizens is enhanced through the wise and appropriate application of science and technology to security, health, education, government, business opportunities, agriculture, and environmental protection.

Mission: The mission of the Authority is to bring the benefits of science and advanced technology to the people and state of Arkansas.

For the purpose of R&D planning, the Authority made the following assumptions:

- The context for R&D is economic growth.
- Economic growth is driven by investments in innovation and human capital.
- The key partners in achieving economic growth are existing and emerging technology (or knowledge-based) firms, research universities, and the educational infrastructure.
- The roles of the key partners are to create businesses, high paying jobs, and wealth by commercializing innovations; to produce innovations and knowledge workers; and to focus limited resources on the best research and development opportunities for existing and emerging technology firms.

2002 R&D Plan

The research areas of strategic importance to Arkansas in 2002 include:

Advanced Materials and Manufacturing Systems with emphases on:

- Photonics;
- Nanotechnology;
- Electronics Manufacturing;
- Environmental Issues related to materials and manufacturing; and
- The Arkansas Manufacturing Extension Network's strengths in
  -- Quality Management,
  -- Lean Manufacturing, and
  -- Six Sigma.

Agriculture, Food and Environmental Sciences with emphases in:

- Rice;
- Poultry;
- Aquaculture;
- Toxicology;
- Agri-Medicine;
- Forestry;
- Spatial Technology; and
- Nutrition.

Biotechnology, Bioengineering, and Life Sciences with emphases in:

- Genetics;
- Oncology;
- Geriatrics;
- Neuroscience;
- Medical Devices;
- Rehabilitation; and
- Biopharmaceuticals and Drug Discovery.

Information Technology with emphases on developments in:

- Knowledge and Data Engineering;
- Database Systems;
- Distributed Systems;
- Wireless Systems;
- Software Development; and
- State-of-the-art applications of information technology to
  -- Transportation and Logistics,
  -- Bioinformatics, and
  -- Healthcare.

Human Resource Development with emphases on:

- The knowledge-based Career Pipeline, including undergraduate research support for students;
- Educational loan forgiveness for students from undergraduate through Ph.D. levels; and
- Linkages between undergraduate and graduate programs similar to the Space Grant Consortium and Biomedical Research Infrastructure Network.

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